

CLAIMS

- 5 1. A process for the catalytic partial oxidation of liquid fuels, selected from hydrocarbon and/or oxygenated compounds, together with gaseous fuels, selected from hydrocarbon compounds, natural gas and/or LPG, by means of a suitable catalytic system comprising the
- 10 following steps:
- premixing and optionally heating to temperatures ranging from 25 to 400°C, the reagents consisting of said liquid hydrocarbons, said gaseous hydrocarbons and oxygen or air or oxygen enriched air, optionally
 - 15 in the presence of vapour and/or CO₂;
 - reacting the mixture of reagents in the catalytic zone, at inlet temperatures ranging from 50 to 500°C and space velocities ranging from 1000 to 1,000,000 NL reagents/L cat x h, reaching temperatures at the out-
 - 20 let of the catalytic bed ranging from 450 to 1350°C.
2. The process according to claim 1, wherein, heavy residues from oil distillation are also present among the reagents.
3. The process according to claim 2, wherein the heavy
- 25 residues from oil distillation are mixed with the rea-

gents after being fluidized by means of thermal treatment or by dilution with suitable gas oils.

4. The process according to claim 1, wherein the catalytic system consists of oxides, oxynitrides, nitrides, carbides and/or oxycarbides containing one or more elements selected from Rh, Ru, Ir, Pt, Ni, Fe, Co and Mo.

5. The process according to claim 1, wherein, among the reagents, the ratio between vapour moles/moles of hydrocarbon carbon atoms (vapour/C) at the inlet of the catalytic zone ranges from 0 to 2 and the ratio between oxygen moles/moles of hydrocarbon carbon atoms (O_2/C) ranges from 0.1 to 0.8.

6. The process according to claim 1, wherein, among the reagents, the ratio between vapour moles/moles of hydrocarbon carbon atoms (vapour/C) at the inlet of the catalytic zone ranges from 0.1 to 1 and the ratio between oxygen moles/moles of hydrocarbon carbon atoms (O_2/C) ranges from 0.25 to 0.75.